



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,870	08/09/2006	Florence Clement	1022702-000302	8284
21839 7590 01/12/2010 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404				
EXAMINER				
GRAY, JILL M				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
01/12/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary

Application No.

10/565,870

Applicant(s)

CLEMENT ET AL.

Examiner

Jill Gray

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2009.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-42 is/are pending in the application.
4a) Of the above claim(s) 24 and 25 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 22, 23 and 26-42 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB-06)
Paper No(s)/Mail Date 09/03/2009
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the species of a yarn and polyamide matrix in the reply filed on September 3, 2009 is acknowledged. The traversal is on the ground(s) that this election is for search only and that the Office will follow the procedure set forth in MPEP 809.02 and MPEP 803.02. In response thereto, the examiner fully intends to follow all appropriate procedure in accordance with MPEP 809 and 803 in the examination of this application. Claims 24-25 are non-elected.

The requirement is still deemed proper and is therefore made FINAL.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The prior art references disclosed in the specification have been considered by the examiner.

Specification

4. Applicant is reminded of the proper content of an Abstract of the Disclosure.

In chemical patent abstracts for compounds or compositions, the general nature of the compound or composition should be given as well as its use, *e.g.*, "The compounds are of the class of alkyl benzene sulfonyl ureas, useful as oral anti-diabetics." Exemplification of a species could be illustrative of members of the class. For processes, the type reaction, reagents and process conditions should be stated, generally illustrated by a single example unless variations are necessary.

Complete revision of the content of the abstract is required on a separate sheet.

5. The abstract of the disclosure is objected to because it states that the invention is directed to "wires, fibers and filaments" but does not mention yarns. Correction is required. See MPEP § 608.01(b).

6. The disclosure is objected to because of the following informalities: the Brief Description of the Drawings is missing.

Appropriate correction is required.

7. The use of the trademarks such as "IRGAFOS 168" and "IRGANOX B 1171" has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 22-24, 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

More specifically, claims 22-24 are indefinite due to the presence of parenthetical expressions. When a phrase is encased in parenthesis, it is not clear if that phrase is meant to be a part of the claim or not, thus rendering it difficult to determine the metes and bounds for which patent protection is being sought.

10. Regarding claim 26, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 22-23, 26-27, and 29-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al., 3,893,981 (Thomas).

Regarding Independent claim 22

Thomas discloses yarn obtained from a composition comprising a polymer matrix formed from the polycondensation of monomers that can be lactams such as caprolactam, lauryl lactam or an aminocaproic acid, wherein said lactam are present in amounts of up to 100 mol%. The macromolecular chains of formula (II) are not required to be present. See entire document, and for example, abstract, column 2, lines 61-65 and column 3, lines 29-36 and Example 11.

Thomas does not specifically disclose that his yarns are abrasion-resistant or the specific structure of formula (I).

In this regard, Thomas discloses the formation of a polymer matrix that has recurring structural units that have close structural similarities to the generic formula (I) of present claim 22. See for example, column 4, lines 32-60. Also, Thomas discloses the polycondensation of monomers that are of the same type as those disclosed by applicants as being suitable, such as lactams. Accordingly, the examiner has reason to believe that the resultant polymer is the same as or substantially similar to that claimed by applicants, and would have the same properties, such as abrasion resistance and that the generic formula (I) fully embraces the polyamide of Thomas, in the absence of factual evidence to the contrary. "When the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or

obviousness has been established. *In re Best*, 562, F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not". *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

Regarding dependent claims 23, 26-27, and 29-42

Regarding claim 23, Thomas is as set forth above and further discloses the formation of polyamides. See entire document and abstract.

Regarding claim 26, Thomas is as set forth above and discloses up to 100 mol% of the polyamide structural units. See column 2, lines 49-57.

Regarding claim 27, as set forth above, Thomas teaches a polymer matrix that has recurring structural units that have close structural similarities to the generic formula (I) of present claim 22 and the polycondensation of the same type of monomers contemplated by applicants. Accordingly, the examiner has reason to believe that the resultant polymer is the same as or substantially similar to that claimed by applicants, and would have the same properties, such as a molecular weight amount that is within the claimed range of at least 25000 g/mol, in the absence of factual evidence to the contrary. "When the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562, F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and

the prior art are the same, the applicant has the burden of showing that they are not". *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

Regarding claims 29-30 and 33-34, Thomas discloses that his polyamide is obtained by copolymerization from a mixture that includes a difunctional compound that can be a monomer of b) or b'), such as adipic acid, sebacic acid, isophthalic acid or terephthalic acid. Thomas further discloses that this compound is present in an amount of 1.0 to 2.0 mol%. This teaching would render obvious the requirement of claim 30 of between 0.05 and 1 mol%, because the 1 mol% as taught in the prior art is sufficiently close to applicants' upper limit of 1mol% that the skilled artisan would reasonably expect the properties of the resultant polyamide to be the same or substantially similar. See column 3, lines 45 through column 4, and line 10.

Regarding claims 31-32 and 35-36, in claims 31 and 35, the phrase "melt-blending" is drawn to the method of making the polyamide, thereby resulting in a product-by-process claim. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. There is no clear difference in the end product, i.e. the yarn of the prior art and that of the present invention. Claims 32 and 36 are reliant upon the process limitations

of present claims 31 and 35. In addition, as set forth above, and incorporated herein, Thomas discloses that the difunctional compound can be present in amount within the claimed range set forth in present claims 32 and 36. Note Example 1, which teaches the adipic acid present in an amount of about 0.8 wt% with respect to the weight of the polyamide. As to claim 35 and the compound of formula (V), the teaching at column 3, lines 55-62 of Thomas render obvious this requirement.

Regarding claims 37-42, Thomas discloses the formation of articles comprising his yarns, such as textiles and fabrics, or foils. This teaching renders obvious the formation of a felt (claim 38), fabric (claim 41) and a net (claim 42). As to claims 39 and 40, the formation of carpets or rope or belts from yarns would have been obvious to one of skill in this art at the time the invention was made and is not construed to be a matter of invention, in the absence of specific properties that are directly related to the these end products.

Therefore, the teachings of Thomas would have rendered obvious the invention as claimed in present claims 22-23, 26-27 and 29-42.

15. Claims 22-23, 26-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cucinella et al., 6,160,080 (Cucinella).

Regarding Independent claim 22

Cucinella discloses a polyamide that can be used to make yarns, said polyamide being formed from a polycondensate having macromolecular chains that are structurally similar to those of formula (I) of present claim 22. See entire document, and for example, columns 1-4 and column 5, line 12.

Cucinella is silent as to the yarns being abrasion resistant.

In this regard, Cucinella discloses the formation of a polymer matrix consisting of a polycondensate composed of macromolecular chains that is the same as or has close structural similarities to the generic formula (I) of present claim 22. See for example, columns 1-4. Also, Cucinella discloses the polycondensation of monomers that are of the same type as those disclosed by applicants as being suitable, such as lactams. Note Example 1. Accordingly, the examiner has reason to believe that the resultant polymer is the same as or substantially similar to that claimed by applicants, and would have the same properties, such as abrasion resistance and that the generic formula (I) fully embraces the polyamide of Cucinella, in the absence of factual evidence to the contrary. "When the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562, F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not". *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

Regarding dependent claims 23 and 26-42

As to claim 23, Cucinella discloses a polyamide.

Regarding claims 27, Cucinella discloses that the molecular weight can be greater than 10,000. See column 3, lines 32-37.

Regarding claim 26, Cucinella discloses that the polyamide is present in an amount of 30% and 80% by mass of with respect to the total mass of the polymer. See claim 14. It is the examiner's position that the weight percents taught by Cucinella would result in a mol% that is at least 45 mol%. Moreover, it is the examiner's position that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 105 USPQ 233 (CCPA 1955).

Regarding claim 28, Cucinella discloses that R2 can be a pentamethylene radical. See claim 3 and column 2, lined 56-60.

Regarding claims 29-30 and 33-34, Cucinella discloses that his polyamide can be obtained by copolymerization of a mixture of monomers comprising a polyfunctional compound and monomers having structures that are the same as or substantially similar to formulae (IIIa) and (IIIb). See column 3, lines 37-63. Regarding claim 30, Cucinella teaches that the compound is present in small amounts, such as less than 20% by weight. See column 4, line 66 through column 5 and line 2. It is the examiner's position that amounts of less than 20% by weight would fully embrace the present claimed 0.05 and 1 mol%.

Regarding claims 31-32 and 35-36, in claims 31 and 35, the phrase "melt-blending" is drawn to the method of making the polyamide, thereby resulting in a product-by-process claim. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in

the product-by-process is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process."

In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. There is no clear difference in the end product, i.e. the yarn of the prior art and that of the present invention. Claims 32 and 36 are reliant upon the process limitations of present claims 31 and 35. In addition, as set forth above, and incorporated herein, Cucinella discloses that the polyfunctional compound can be present in amount within the claimed range set forth in present claims 32 and 36, i.e., less than 20 wt%. As to claim 35 and the compound of formula (V), the teaching at columns 3-4, render obvious this requirement.

Regarding claims 37-42, Cucinella discloses that the polyamide can be used in the formation of yarns and various articles. As to the specific articles, it would have been obvious to one of ordinary skill in this art at the time the invention was made to form yarn into various known products such as textiles, carpet, rope, felts, etc. during routine experimentation and is not construed to be a matter of invention, in the absence of specific properties that are directly related to the these end products.

Therefore, the teachings of Cucinella would have rendered obvious the invention as claimed in present claims 22-23 and 26-42.

No claims are allowed.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTOL-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 10:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jill Gray/
Primary Examiner
Art Unit 1794

jmg